

Work Order ID 83684

83684

Page 1

April-23-12 3:57:13 PM

Item ID: D6102-013

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Saddle Billet

Start Date: 23/04/2012 Start Qty: 20.00

20

Cust Item ID:

Required Date: 30/04/2012 Req'd Qty: 20.00

20

Customer:

Reference:

Approvals: Process Plan: MLJ Date: 12/04/24 Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D6102	Rev D								

100 PURCHASING 0.00

100

Purchasing

Memo

0.00

Purchasing

Issue P/O: 16815 a) Description: Aluminum Billetb) 7.000" x 6.500" x 2.000" thickc) Tolerance on all dimensions is +0.06/0.00d) Grain direction along 6.500" lengthe) Material: 6061-T6/T6511 (QQ-A-250/11 or QQ-A-200/8)Material release certifi

CL 12/04/24 20

110 Receive & Inspect for Damage & Mat'l Certs 0.00

110

Packaging

Memo

0.00

Packaging

Ensure material certification is attached

16/2/07 20

120 QC6- Inspect dimensions to drawing 0.00

120

QC

Memo

0.00

Quality Control

Check certification to Dwg D6102 for compliance

12/05/08

20

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 83684

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April-23-12 3:57:13 PM

Item ID: D6102-013

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Item Name: Saddle Billet

Stop ***NS2***

Start Date: 23/04/2012 Start Qty: 20.00

20

Cust Item ID:

Required Date: 30/04/2012 Req'd Qty: 20.00

20

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

130

Identify as per dwg & Stock Location: MAT45 0.00

130

Packaging

Memo

0.00

Packaging

cmk 12/05/08

20

140

QC21- Final Inspection - Work Order Release

0.00

140

QC

Memo

0.00

Quality Control

12/5/9

MLJ 12/05/09

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

April-23-12 3:57:18 PM

Page 1

Work Order ID: 83684

83684

Parent Item: D6102-013

D6102-013

Parent Item Name: Saddle Billet

Start Date: 23/04/2012

Required Date: 30/04/2012

Start Qty: 20.00

Required Qty: 20.00

Comments: IPP Rev:A New Issue 06-07-03 JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6102-013P		Purchased	No			110	Each	0.0000	1	20			
D6102-013P									**			10/4/5/7	(20)
6061-T6 7.0x6.5x2.0													

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

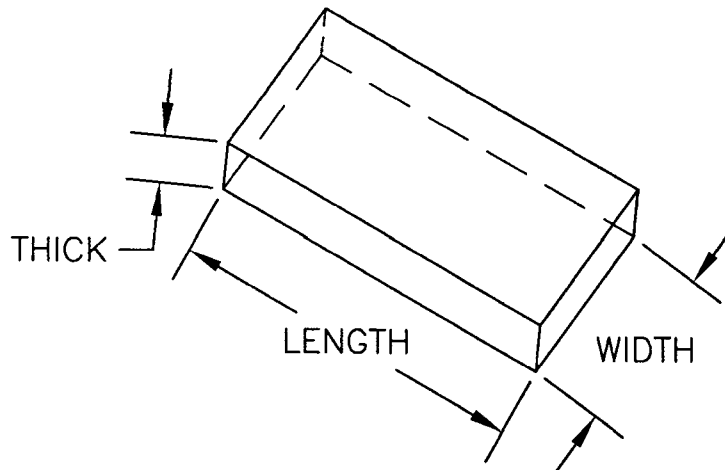
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART

DESIGN #	DRAWN BY PH	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED CP	APPROVED #	DRAWING NO. D6102	Rev. D SHEET 1 OF 1
DATE 06.06.30		TITLE SADDLE BILLET, 6061	SCALE NTS
A	01.03.30	NEW ISSUE	
B	03.10.20	ADD D6102-005/-007/-009	
C	04.08.25	ADD D6102-010/-011	
D	06.06.30	ADD D6102-013	

SPECIFICATION CONTROL DRAWING



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 83687 MLC
12/01/24

RELEASED

06.08.15 #

PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, LENGTH x WIDTH x THICK (+0.06/-0.00), AND GRAIN DIRECTION AS SHOWN.

TOLERANCE ON ALL DIMENSIONS IS +0.06/-0.00.

ALL DIMENSIONS ARE IN INCHES.

Part No.	Alloy	Length	Width	Thick	Grain Direction
D6102-001	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	7.880	6.250	2.000	Along 7.880 Length
D6102-003	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	6.000	6.250	2.000	Along 6.000 Length
D6102-005	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	47.85	15.250	1.000	Along 47.85 Length
D6102-007	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	7.500	7.000	2.500	Along 7.500 Length
D6102-009	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	11.000	6.000	5.000	Along 11.000 Length
D6102-010	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	7.950	8.250	2.500	Along 7.950 Length
D6102-011	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	6.500	8.250	2.500	Along 6.500 Length
D6102-013	6061-T6/T651 (QQ-A-250/11 or QQ-A-200/8)	6.500	7.000	2.000	Along 6.500 Length

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

**Castle Metals®**

A. M. Castle & Co.

PACKING SLIP/
CERTIFICATE OF CONFORMANCE

Page 1 of 1

Shipment No:1299069

Ship From: A. M. Castle & Co. (Canada) Inc. MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2		Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date Shipped	F.O.B.	Freight Terms		Carrier		BOL No	
04-MAY-2012	ORIGIN	Prepaid		MANITOULIN		1299069-2	

Shipment Details	Final Destination Branch - MON
-------------------------	---------------------------------------

Order No	Line No	Item No	Description				
2157330	1	8641.MO	2.0000.PL.6061.T651.ALUMINUM.48.5000.144.5000 CUT 2SIDED TO 7 IN (+ .0620/- .0000 IN (GRAIN TO RUN ALONG 6.5")) X 6.5 IN (+ .0620/- .0000 IN (GRAIN TO RUN ALONG 6.5")) - ALUMINUM PLATE SAW SPECIFICATIONS: QQ-A-250/11				
Purchase Order No		Part Number		Ordered Qty		Invoice Qty	
16815		YOUR ITEM NUMBER: D6102-013		20.00 PCS		20.00 PCS	
Details							
Delivery No.	Mill	Heat Number	Mech Id	PCS	Width (IN)	Length (IN)	Shipped Qty(LBS)
117584627	KAISER ALUMINUM	584440A2		20			182.28

These commodities, technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.

Reviewed by Authorized Castle Metals Representative:

Date:

Name:

12/05/08

SHIP TO: AM CASTLE & CO 3400 NO WOLF ROAD FRANKLIN PARK, IL 60131
SOLD TO: AM CASTLE & CO- SOLD TO 1420 KENSINGTON RD SUITE 220 OAK BROOK, IL 60523

KAISER
ALUMINUM
 Trentwood Works - Spokane, WA 99215
 Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
 4257756

CUSTOMER PO NUMBER: 151519		WORK PACKAGE:		CUSTOMER PART NUMBER: 8641		SHIP RUN/LOAD: 102279/18		GOV'T CONTRACT NUMBER:	
KAISER ORDER NO: 1130672	LINE ITEM: 3	SHIP DATE: 19-MAR-2012	ALLOY: 6061	CLAD: BARE	TEMPER: T651	PRODUCT DESCRIPTION: KaiserSelect® Precision Plate			
WEIGHT SHIPPED: 9776 LB	QUANTITY: 7 PCS EST.	B/L NUMBER: 2036264		GAUGE: 2.0000 IN		DIAMETER/WIDTH: 48.500 IN		LENGTH: 144.500 IN	

MHU 1569052: LOT 584440A2: 2 pieces;
 MHU 1572021: LOT 584487A3: 2 pieces;
 MHU 1572022: LOT 584487A3: 2 pieces;
 MHU 1572025: LOT 584487A3: 1 pieces;

Certified Specifications

AMS 4027/RevN
 EN 10204-3.1/Rev2004

ASME SB 209/Rev2004

ASTM B 209/Rev10

Test Code: 1511

Test Results

Lot: 584440A2 Cast 851 Drop 05 Ingot 2 Melted in USA

(ASTM E8/B557)
 (EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T651	LT / 2 (Min:Max)	49.5 : 50.3 (341 : 347)	44.7 : 46.3 (308 : 319)	13.8 : 14.7

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	°	OTHER
Actual	0.73	0.6	0.30	0.07	1.0	0.18	0.15	0.03	0.01	0.00	TOT	0.05

KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
4257756

Lot: 584487A3 Cast 851 Drop 40 Ingot 5 Melted in USA

(ASTM E8/B557)
(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T651	LT / 2 (Min:Max)	49.1 : 50.2 (339 : 346)	44.0 : 44.8 (303 : 309)	15.3 : 15.5

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.70	0.6	0.29	0.07	1.0	0.20	0.14	0.02	0.01	0.00	TOT 0.05

ALLOY LIMITS

	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
6061												
MIN	0.40	0.0	0.15	0.00	0.8	0.04	0.00	0.00	0.00	0.00	EACH	0.05
MAX	0.8	0.7	0.40	0.15	1.2	0.35	0.25	0.15	0.05	0.05	TOT	0.15

Aluminum Remainder

ORDER COMMENTS

AMC A96061-161 R 2

TEST NOTES

6061 sheet or plate certified to AMS 4025, AMS 4026, or AMS
4027 also meets applicable requirements of AMS-QQ-A-250/11
Rev.A.

CMH
12/05/08

CERTIFICATION

KAISER ALUMINUM FABRICATED PRODUCTS, LLC (KAISER) HEREBY CERTIFIES THAT METAL SHIPPED UNDER THIS ORDER WAS MELTED IN THE UNITED STATES OF AMERICA OR A QUALIFYING COUNTRY PER DFARS 225.872-1(a), WAS MANUFACTURED IN THE UNITED STATES OF AMERICA, AND MEETS THE REQUIREMENTS OF DFARS 252.225 FOR DOMESTIC CONTENT. THIS MATERIAL HAS BEEN INSPECTED, TESTED, AND FOUND IN CONFORMANCE WITH THE REQUIREMENTS OF THE APPLICABLE SPECIFICATIONS AS INDICATED HEREIN. ALL METAL WHICH IS SOLUTION HEAT TREATED COMPLIES WITH AMS 2772. ANY WARRANTY IS LIMITED TO THAT SHOWN ON KAISER'S STANDARD GENERAL TERMS AND CONDITIONS OF SALE. TEST REPORTS SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF KAISER ALUMINUM FABRICATED PRODUCTS, LLC LABORATORY. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW. ISO-9001:2000 CERTIFIED.

Mike Klocke

MIKE KLOCKE, LABORATORIES SUPERVISOR

Castle Metals FP
HEAT NUMBER 584440A2
MECHANICAL ID _____
ITEM CODE 8641
LOT NUMBER _____
PO NUMBER 151519
RECEIPT DATE 3-22-12
SUPPLIER KAINER
SPECIFICATION _____
LCS NO
COMMENT _____
APPROVED BT

GR 12/08/08